

Serial No. 09/559,273
Docket No. F99-144-US

2

AMENDMENTS TO THE CLAIMS:

Please cancel claims 1-2, 12 and 28 without prejudice or disclaimer.

1-2 (Canceled)

3. (Currently amended) A flip chip type of light-emitting semiconductor device comprising:

a substrate;

group III nitride compound semiconductor layers formed on said substrate, said layers comprising a p-type semiconductor layer;

a positive electrode including at least one layer of a first positive electrode layer which is formed on or above said p-type semiconductor layer and reflects light toward said substrate, said first positive electrode layer comprising at least one of rhodium (Rh), ruthenium (Ru), and an alloy including at least one of these metals; and

~~A flip chip type of light-emitting semiconductor device using group III nitride compound according to claim 1, further comprising:~~

~~a first thin-film metal layer, comprising at least one of cobalt (Co), nickel (Ni), and an alloy including at least one of these metals, formed between said p-type semiconductor layer and said first positive electrode layer,~~

~~wherein said substrate transmits said light reflected from said positive electrode, and light is emitted from a substrate side of said light-emitting device.~~

4. (Currently amended) A flip chip type of light-emitting semiconductor device comprising:

a substrate;

group III nitride compound semiconductor layers formed on said substrate, said layers comprising a p-type semiconductor layer;

a positive electrode including at least one layer of a first positive electrode layer which is formed on or above said p-type semiconductor layer and reflects light toward said substrate, said first positive electrode layer comprising at least one of rhodium (Rh),

Serial No. 09/559,273
Docket No. F99-144-US

3

ruthenium (Ru), and an alloy including at least one of these metals; and

~~A flip chip type of light-emitting semiconductor device using group III nitride compound according to claim 2, further comprising:~~

a first thin-film metal layer, comprising at least one of cobalt (Co), nickel (Ni), and an alloy including at least one of these metals, formed between said p-type semiconductor layer and said first positive electrode layer,

wherein said substrate transmits said light reflected from said positive electrode, and light is emitted from a substrate side of said light-emitting device, and

wherein said positive electrode has a multi-layer structure comprising a plurality of metals.

5. (Previously presented) A flip chip type of light-emitting semiconductor device using group III nitride compound according to claim 3, wherein a thickness of said first thin-film metal layer is in the range of 2 Å to 200 Å.

6. (Previously presented) A flip chip type of light-emitting semiconductor device using group III nitride compound according to claim 4, wherein a thickness of said first thin-film metal layer is in the range of 2 Å to 200 Å.

7. (Previously presented) A flip chip type of light-emitting semiconductor device using group III nitride compound according to claim 3, further comprising:

a second thin-film metal layer, comprising at least one of gold (Au) and an alloy including gold (Au), formed between said first thin-film metal layer and said first positive electrode layer.

8. (Previously presented) A flip chip type of light-emitting semiconductor device using group III nitride compound according to claim 4, further comprising:

a second thin-film metal layer, comprising at least one of gold (Au) and an alloy including gold (Au), formed between said first thin-film metal layer and said first positive electrode layer.

Serial No. 09/559,273
Docket No. F99-144-US

4

9. (Previously presented) A flip chip type of light-emitting semiconductor device using group III nitride compound according to claim 7, wherein a thickness of said second thin-film metal layer is in the range of 10 Å to 500 Å.

10. (Previously presented) A flip chip type of light-emitting semiconductor device using group III nitride compound according to claim 8,
wherein a thickness of said second thin-film metal layer is in the range of 10 Å to 500 Å.

11-26. (Canceled)

27. (Previously presented) A flip chip type of light-emitting semiconductor device comprising:

a substrate;

a plurality of group III nitride compound semiconductor layers comprising a p-type semiconductor layer, formed on said substrate;

a positive electrode comprising at least one layer, said at least one layer comprising a first positive electrode layer which is formed above said p-type semiconductor layer, reflects light toward said substrate, and comprises at least one of silver (Ag), platinum (Pt), palladium (Pd) and an alloy including at least one of these metals; and

a first thin-film metal layer comprising at least one of cobalt (Co), nickel (Ni) and an alloy including at least one of these metals, formed between said p-type semiconductor layer and said first positive electrode layer.

28. (Canceled)

29. (Previously presented) A flip chip type of light-emitting semiconductor device using group III nitride compounds according to claim 27, wherein a thickness of said first thin-film metal layer is in the range of 2 Å to 200 Å.

30. (Previously presented) A flip chip type of light-emitting semiconductor device using

Serial No. 09/559,273
Docket No. F99-144-US

5

group III nitride compounds according to claim 27, further comprising:

a second thin-film metal layer comprising at least one of gold (Au) and an alloy including gold (Au), formed between said first thin-film metal layer and said first positive electrode layer.

31. (Previously presented) A flip chip type of light-emitting semiconductor device using group III nitride compounds according to claim 30, wherein a thickness of said second thin-film metal layer is in the range of 10 Å to 500 Å.

32. (Currently amended) A flip chip type of light-emitting semiconductor device using group III nitride compounds according to claim 27, wherein a thickness of the first positive electrode layer is in the range of 0.01 μm mm to 5 μm mm.

33. (Currently amended) A flip chip type of light-emitting semiconductor device comprising:

a substrate;

a plurality of group III nitride compound semiconductor layers formed on said substrate;

a first positive electrode layer which is formed above a p-type semiconductor layer, reflects light toward said substrate, and comprises at least one of silver (Ag), platinum (Pt), palladium (Pd) and an alloy including at least one of these metals; and

a second positive electrode layer comprising at least one of gold (Au) and an alloy including gold (Au), formed on said first positive electrode layer.

A flip chip type of light-emitting semiconductor device using group III nitride compounds according to claim 28;

wherein a thickness of the first positive electrode layer is in the range of 0.01 μm mm to 5 μm mm.

34. (Currently amended) A flip chip type of light-emitting semiconductor device comprising:

a substrate;

Serial No. 09/559,273
Docket No. F99-144-US

6

a plurality of group III nitride compound semiconductor layers formed on said substrate;

a first positive electrode layer which is formed above a p-type semiconductor layer, reflects light toward said substrate, and comprises at least one of silver (Ag), platinum (Pt), palladium (Pd) and an alloy including at least one of these metals; and

a second positive electrode layer comprising at least one of gold (Au) and an alloy including gold (Au), formed on said first positive electrode layer.

~~A flip chip type of light-emitting semiconductor device using group III nitride compounds according to claim 28;~~

wherein a thickness of said second positive electrode layer is in the range of 0.03 μm mm to 5 μm mm.

35. (Currently amended) A flip chip type of light-emitting semiconductor device comprising:

a substrate;

a plurality of group III nitride compound semiconductor layers formed on said substrate;

a first positive electrode layer which is formed above a p-type semiconductor layer, reflects light toward said substrate, and comprises at least one of silver (Ag), platinum (Pt), palladium (Pd) and an alloy including at least one of these metals;

a second positive electrode layer comprising at least one of gold (Au) and an alloy including gold (Au), formed on said first positive electrode layer; and

~~A flip chip type of light-emitting semiconductor device using group III nitride compounds according to the claim 28, further comprising:~~

a third positive electrode layer comprising at least one of titanium (Ti), chromium (Cr) and an alloy including at least one of these metals, formed on said second positive electrode layer.

36. (Previously presented) A flip chip type of light-emitting semiconductor device using group III nitride compounds according to claim 35, wherein a thickness of said third positive electrode layer in the range of 3 Å to 1000 Å.